ABSTRACT

Anisul Mutawahis. (2021). ***Analysis of Mathematical Reasoning Ability and Learning Independence of High School Students Through Problem-Based Learning (PBL)***

Using a qualitative approach this research provides information about mathematics learning activities for junior high school and high school students with Problem-Based Learning (PBL) model. The PBL model is reviewed based on mathematical reasoning abilities and student learning independence. The aims of the study are to describe: (1) students' mathematical reasoning abilities through PBL model; (2) students' learning independence through PBL model; (3) the effectiveness of PBL model on mathematical reasoning abilities. This type of research is a literature study with data collection techniques, namely editing, organizing, and finding. This research was using inductive, interpretative, and comparative as analytical techniques. The results of this study indicate that: (1) the achievement of mathematical reasoning indicators through PBL model is quite significant. The result showed that the greatest achievement on the indicator for junior high school is the indicator using reasoning on pattern and characteristics (analogy) and for senior high school is the indicator of making assumptions and proofs; (2) the PBL model can improve student learning independence based on the average score and indicators, which it showed that learning initiative is the highest indicator; (3) based on pre-test and post-test scores, average scores, N-Gain scores and coefficients of determination, it showed that the PBL model can improve students' mathematical reasoning abilities. Thus, it can be concluded that there is an influence between the PBL model on students' mathematical reasoning abilities based on the coefficient of determination.

Keywords: *Mathematical Reasoning Ability, Student Learning Independence, Problem-Based Learning (PBL)*